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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/448,679	11/24/1999	CHRISTOPHER J. LORD	INTL-0252-US	5314

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ART UNIT	PAPER NUMBER
2614	10

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/448,679	Applicant(s) LORD ET AL.	
	Examiner Trang U. Tran	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on March 25, 2003, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-11, 13-14 and 16-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawlor et al. (US Patent No. 5,353,059).

In considering claim 1, Lawlor et al. discloses all the claimed subject matter, note 1) the claimed receiving a video frame is met by input data element (Fig. 11, col. 13, lines 36-56), 2) the claimed identifying noise in a first portion of the video frame is met

by the threshold measurement and error flag analysis unit 640 (Figs. 11 and 15, col. 13, line 57 to col. 14, line 24), and 3) the claimed replacing the first portion with a second portion of the video frame is met by the spatial replacement which involves replacing a corrupted data element by a single one of the surrounding elements selected according to a predetermined order of priority (Figs. 13-15, col. 15, line 4 to col. 17, line 21).

In considering claim 2, the claimed wherein identifying further comprises: associating a noise level with the first portion of the video frame is met by three checks for the corrupted data element (Fig. 8, col. 12, lines 44-64), and the claimed comparing the noise level to a predetermined value is met by the threshold measurement and error flag analysis unit 640 (Figs. 11 and 15, col. 13, line 57 to col. 14, line 24).

In considering claim 3, the claimed wherein associating further comprises distinguishing the first portion from the second portion is met by the corrupted data element 680 and the surrounding elements (Fig. 13, col. 15, lines 4-15).

In considering claim 4, Lawlor et al discloses all the claimed subject matter, note 1) the claimed wherein distinguishing further comprises: associating a first value with the first portion is met by the current value (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21), 2) the claimed associating a second value with the second portion is met by the surrounding (adjacent to) elements (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21), and performing a plurality of arithmetic operations between the first value and the second value is met by the interpolation coefficients (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21).

In considering claim 5, the claimed wherein associating a first value with the first portion further comprises: identifying a plurality of values associated with the first portion; and performing an arithmetic operation on the plurality of values to render the first value is met by the current value and the surrounding (adjacent to) elements (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21).

In considering claim 6, the claimed wherein comparing the noise to the predetermined value comprises comparing the noise to a noise level found in a second video frame is met by the subtractor 630 determines the numerical difference between a value of data element currently at the input to the apparatus and the corresponding element which has been delayed by two frames, passing its result to a threshold measurement and error flag analysis unit 640 which compares the current element with the threshold value to determine the corrupted data element (Figs. 10-11 and 15, col. 13, line 16 to col. 14, line 24).

In considering claim 7, the claimed wherein comparing the noise to a predetermined value comprises associating the predetermined value to the type of the video input signal is met by the threshold measurement and error flag analysis unit 640 which the threshold level is varied according to the spatial frequency range of the sub-band containing the corrupted element (Figs. 11 and 15, col. 13, line 57 to col. 14, line 24).

In considering claim 8, the claimed wherein comparing the noise to a predetermined value comprises associating the predetermined value to the type of noise in the video frame is met by the threshold measurement and error flag analysis

unit 640 which the threshold level is varied according to the spatial frequency range of the sub-band containing the corrupted element (Figs. 11 and 15, col. 13, line 57 to col. 14, line 24).

In considering claim 9, Lawlor et al. discloses all the claimed subject matter, note 1) the claimed a bus is met by the connection between devices of the system 700 (Fig. 14), 2) the claimed a processor coupled to the bus is met by the programmable filter unit 740 which calculates the concealment value 800 (Fig. 14, col. 15, line 16 to col. 16, line 3), 3) the claimed a device coupled to the bus to receive a video signal is met by the delay unit 750 and sample array 720 (Fig. 14, col. 15, line 16 to col. 16, line 3), and 4) the claimed a storage medium coupled to the bus including a software program that, upon execution: detects noise in a first portion of a video frame of the video signal, and replaces a first portion of the video frame is met by the error flag analyzer 760 which is effectively a look-up table, and in fact is implemented using a programmable read only memory (PROM) (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21 and col. 18, lines 8-13).

In considering claim 10, the claimed wherein the video frame is stored in a memory and, upon execution, the software program writes to the memory to replace the first portion of the video frame is met by the delay unit 750 and sample array 720 (Fig. 14, col. 15, line 16 to col. 17, line 21 and col. 18, lines 8-13).

Claim 11 is rejected for the same reason as discussed in claim 2.

Claims 13-14 are rejected for the same reason as discussed in claims 6-7, respectively.

Claim 16 is rejected for the same reason as discussed in claim 1.

In considering claim 17, the claimed further storing instructions that cause the processor-based system to locate the video frame by reading a memory device is met by the error flag analyzer 760 which is effectively a look-up table, and in fact is implemented using a programmable read only memory (PROM) (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21 and col. 18, lines 8-13).

Claim 18 is rejected for the same reason as discussed in claim 2.

Claims 19-20 are rejected for the same reason as discussed in claims 4-5, respectively.

Claim 21 is rejected for the same reason as discussed in claim 6.

In considering claim 22, the claimed wherein the medium storing instructions is a memory device is met by the error flag analyzer 760 which is effectively a look-up table, and in fact is implemented using a programmable read only memory (PROM) (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21 and col. 18, lines 8-13).

Claims 23-24 are rejected for the same reason as discussed in claims 7-8, respectively.

In considering claim 25, Lawlor et al discloses all the limitations, noted that 1) the claimed receiving a video frame is met by input data element (Fig. 11, col. 13, lines 36-56), 2) the claimed analyzing a first portion of the video frame with a first adjacent portion of the video frame to obtain a first result is met by the current value and the surrounding (adjacent to) elements (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21), 3) the claimed analyzing a second portion of the video frame with a second adjacent

portion of the video frame to obtain a second result is met by the current value and the surrounding (adjacent to) elements (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21), and 4) the claimed replacing the first portion of the video frame with one of the second portion, the first adjacent portion or the second adjacent portion if a comparison between the first result and the second result is indicative of noise is met by the spatial replacement which involves replacing a corrupted data element by a single one of the surrounding elements selected according to a predetermined order of priority (Figs. 13-15, col. 15, line 4 to col. 17, line 21).

In considering claim 26, the claimed wherein each of the first and second portions and the first and second adjacent portions comprises a plurality of units, and wherein the analyzing is performed on a unit by unit basis is met by the current value and the surrounding (adjacent to) elements (Figs. 14 and 15, col. 15, line 16 to col. 17, line 21).

In considering claim 27, the claimed calculating a first threshold based upon an amount of the plurality of units per the respective portion is met by the threshold level (col. 13, line 57 to col. 14, line 24).

In considering claim 28, the claimed wherein the first and second results comprises a sum of absolute differences between the first portion and the first adjacent portion and the second portion and the second adjacent portion, respectively is met by the subtractor 630 determines the numerical difference between a value of data element currently at the input to the apparatus and the corresponding element which has been delayed by two frames, passing its result to a threshold measurement and error flag

analysis unit 640 which compares the current element with the threshold value to determine the corrupted data element (Figs. 10-11 and 15, col. 13, line 16 to col. 14, line 24).

In considering claim 29, the claimed wherein the comparison is indicative of noise if a difference between the first result and the second result exceeds the first threshold is met by threshold measurement and error flag analysis unit 640 which compares the current element with the threshold value to determine the corrupted data element (Figs. 10-11 and 15, col. 13, line 16 to col. 14, line 24).

In considering claim 30, the claimed wherein the first portion comprises an edge portion of the video frame is met by the border flag 780 (Fig. 14, col. 15, line 39 to col. 16, line 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawlor et al. (US Patent No. 5,353,059).

In considering claim 12, Lawlor et al discloses all the limitations of the instant invention as discussed in claims 9-11 above, except for providing the claimed wherein the predetermined value is stored in the memory. The capability of storing the predetermined value in the memory is old and well known in the art. Therefore, the

Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the old and well known of storing the predetermined value in the memory into Lawlor et al's system in order to simply the process of detecting noise in the video signal.

In considering claim 15, Lawlor et al discloses all the limitations of the instant invention as discussed in claim 9 above, except for providing the claimed wherein the storage medium is a hard disk drive. The capability of using storage medium is a hard disk drive is old and well known in the art. Therefore, the Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the old and well known of using storage medium is a hard disk drive into Lawlor et al's system in order to reduce the time in access the video signal because hard disk has random access capability.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller,** can be reached at **(703) 305-4795.**

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT
July 11, 2003

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600